

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8

1595 Wynkoop Street DENVER, CO 80202-1129 Phone 800-227-8917 http://www.epa.gov/region08

MAY 0 6 2015

Ref: 8ENF-UFO

CERTIFIED MAIL 7009-3410-0000-2599-4944 RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc. 4116 W 3000 S Ioka Lane P.O. Box 607 Roosevelt, Utah 84066

Re: Underground Injection Control (UIC)

Permission to Resume Injection

Ute Tribal 21-04 Well

EPA Permit ID# UT20736-06521

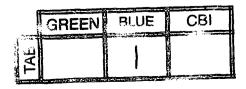
API # 43-013-31735 Antelope Creek Oil Field Duchesne County, Utah

Dear Mr. Farnsworth:

On April 17, 2015, the Environmental Protection Agency (EPA) received information from Petroglyph Operating Company, Inc. on the above referenced well concerning the workover to address a loss of mechanical integrity and the followup mechanical integrity test (MIT) conducted on April 9, 2015. The data submitted shows that the well passed the required MIT. Therefore, pursuant to Title 40 of the Code of Federal Regulations Section 144.51(q)(2) (40 C.F.R. § 144.51(q)(2)), permission to resume injection is granted. Under continuous service, the next MIT will be due on or before April 9, 2020.

Pursuant to 40 C.F.R. § 144.52(a)(6), if the well is not used for a period of at least two (2) years ("temporary abandonment"), it shall be plugged and abandoned unless the EPA is notified and procedures are described to the EPA ensuring the well will not endanger underground sources of drinking water ("non-endangerment demonstration") during its continued temporary abandonment. A successful MIT is an acceptable non-endangerment demonstration and would be necessary every two (2) years the well continues in temporary abandonment.

Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. § 300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.



If you have any questions concerning this letter, you may contact Gary Wang at (303) 312-6469. Please direct all correspondence to the attention of Gary Wang at Mail Code 8ENF-UFO.

Sincerely,

Arturo Palomares, Director Water Technical Enforcement Program Office of Enforcement, Compliance

and Environmental Justice

cc: Gordon Howell, Chairman, Uintah & Ouray Business Committee
Ronald Wopsock, Vice-Chairman, Uintah & Ouray Business Committee
Reannin Tapoof, Executive Assistant, Uintah & Ouray Business Committee
Stewart Pike, Councilman, Uintah & Ouray Business Committee
Tony Small, Councilman, Uintah & Ouray Business Committee
Bruce Ignacio, Councilman, Uintah & Ouray Business Committee
Phillip Chimburas, Councilman, Uintah & Ouray Business Committee
Manuel Myore, Director of Energy, Minerals and Air Programs
Brad Hill, Utah Division of Oil, Gas and Mining

bcc:

Jennifer Harris (8P-TA)

Kimberly Pardue-Welch (8ENF-W)

Gary Wang (8ENF-UFO)

#### Cc addresses:

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Bruce Ignacio, Councilman Uintah & Ouray Business Committee P.O. Box 70 Fort Duchesne, Utah 84026

Manuel Myore, Director of Energy, Minerals and Air Programs Ute Indian Tribe P.O. Box 70 Fort Duchesne, Utah 84026

Brad Hill Utah Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, Utah 84114

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  Print your name and address on the reverse so that we can return the card to you.  Attach this card to the back of the mailpiece, or on the front if space permits.  1. Article Addressed to:  A  Mr. Les Farnsworth, Dist. Supervisor	A. Signature  X  Agent  Addressee  B. Received by (*Printed Name)  C. Date of Delivery  C. Date of Delivery  D. Is delivery address different from item 1? Yes  If YES, enter delivery address below:  No  No  No  No  No  No  No  No  No  N
Petroglyph Operating Company, Inc. 4116 W 3000 S loka Lane P.O. Box 607 Roosevelt, UT 84066	3. Service Type  Certified Mail Express Mail Registered Return Receipt for Merchandise
Roosevelt, UT 84066	
Roosevelit, UT 84066	4. Restricted Delivery? (Extra Fee) ☐ Yes

44	C (D	omestic Mail C	O MAIL™ RE(	Coverage Provided	d)
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m	10	Petroglyph	Operating Comp	oany, Inc.	
	Seni	4116 W 300	00 S loka Lane		
	Stre	P.O. Box 60	07		
<b>L</b> ~	or P City,	Roosevelt,	UT 84066		
	PS Fo	rm 3800, August 20	006	See Reverse for Instru	uctions



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1595 Wynkoop Street DENVER, CO 80202-1129 Phone 800-227-8917 http://www.epa.gov/region08

Ref: 8ENF-UFO

CONCURRENCE COPY

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Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc. 4116 W 3000 S Ioka Lane P.O. Box 607 Roosevelt, Utah 84066

Re:

Underground Injection Control (UIC) Permission to Resume Injection Ute Tribal 21-04 Well EPA Permit ID# UT20736-06521 API # 43-013-31735 Antelope Creek Oil Field Duchesne County, Utah

Dear Mr. Farnsworth:

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Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. § 300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.

If you have any questions concerning this letter, you may contact Gary Wang at (303) 312-6469. Please direct all correspondence to the attention of Gary Wang at Mail Code 8ENF-UFO.

Sincerely,

Arturo Palomares, Director Water Technical Enforcement Program Office of Enforcement, Compliance and Environmental Justice

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bcc:

Jennifer Harris (8P-TA)

Kimberly Pardue-Welch (8ENF-W)

Gary Wang (8ENF-UFO)

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Manuel Myore, Director of Energy, Minerals and Air Programs Ute Indian Tribe P.O. Box 70 Fort Duchesne, Utah 84026

Brad Hill Utah Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, Utah 84114

ROUTING AND TRANSMITTAL SLIP					04/22/15		
TO: (Name, office symbol, room number,				T	Initials	Date	
building, Agency/Post)					1/2	1/2/10	
1. Don Breffle		00	4/22/13				
2. Joan Detty		JD_	4/24//				
3. Kimberly Pardue-Welch					$\sim$	11	
4. Art Palomares						5/5/15	
5. Joan Detty - mail and fax - 435	-72	2-9145			20	5/4/15	
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either: 1) it contains no information clair has been redacted from any version of personnel or the party claiming the info	cial, ned	ORRESPONDENCE\FY13	ny BI	CBI); or 2 yone othe I claim, th	2) any such inf er than U.S. go nat fact must b	formation overnment oe noted	
DO NOT use to FROM: (Name, org. symbol, Agency/Post)	his f	orm as a RECORD of approvals, concurrences, dis clearances, and similar actions	sp		Room No. – Bldg	i.	
				Г	Phone No		



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MAR 0 2 2015

Ref: 8ENF-UFO

#### CERTIFIED MAIL 7009-3410-0000-2599-4814 RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc. 4116 W 3000 S Ioka Lane P.O. Box 607 Roosevelt, Utah 84066

Re: Underground Injection Control (UIC)

Notice of Violation:

Loss of Mechanical Integrity

Ute Tribal 21-04 Well

EPA Permit ID# UT20736-06521

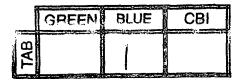
API # 43-013-31735 Antelope Creek Field Duchesne County, Utah

Dear Mr. Farnsworth:

On February 13, 2015, the Environmental Protection Agency (EPA) learned that the Petroglyph Operating Company, Inc. injection well referenced above lost mechanical integrity on February 8, 2015. Pursuant to the above-referenced UIC Permit and Title 40 of the Code of Federal Regulations Section 144.51(q)(1) (40 C.F.R. § 144.51(q)(1)), you must establish and maintain mechanical integrity. A loss of mechanical integrity is a violation of this requirement.

Pursuant to the above-referenced UIC Permit and the regulations at 40 C.F.R. § 144.51(q)(2), you must immediately cease injection into this well. Before injection may resume, you must demonstrate that the well has mechanical integrity by passing a mechanical integrity test (MIT). You must also receive written authorization from the EPA.

Within thirty (30) days of receipt of this letter, please submit a letter describing what action you intend to take regarding the well, including a time frame in which you anticipate the work to be completed. It is expected that you will return this well to compliance within ninety (90) days of the loss of mechanical integrity.



If you choose to plug and abandon this well, the approved plugging and abandonment plan that is incorporated into the permit must be followed. Any deviation from that plan must be submitted to the EPA for approval prior to the plugging operation.

Failure to comply with the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitutes one or more violations of the Safe Drinking Water Act, 42 U.S.C. § 300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.

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Water Technical Enforcement Program
Office of Enforcement, Compliance

and Environmental Justice

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<ul> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature  X
1. Article Addressed to:  Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc.	D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No  MAR 0 2015
4116 W 3000 S loka Lane P.O. Box 607 Roosevelt, UT 84066	3. Service Type  ☐ Certified Mail ☐ Express Mail ☐ Registered ☐ Return Receipt for Merchandise ☐ Insured Mail ☐ C.O.D.  4. Restricted Delivery? (Extra Fee) ☐ Yes
2. Article Number (Transfer from service label)	9 3410 0000 2599 4814

ገ. ተ	U.S. Postal Service TM CERTIFIED MAIL TM RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)
中日	For delivery information visit our website at www.usps.com
	OFFICIAL USE
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	Restricted Delivery Fee (Endorsement Required)
4 1	Mr. Les Farnsworth, District Supervisor
m	Petroglyph Operating Company, Inc.
	Sent To 4116 W 3000 S loka Lane
7	or POB Roosevelt, UT 84066
	PS Form 3800, August 2006 See Reverse for Instructions



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
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Notice of Violation:

Loss of Mechanical Integrity

Ute Tribal 21-04 Well

EPA Permit ID# UT20736-06521

API # 43-013-31735 Antelope Creek Field Duchesne County, Utah

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Brad Hill Utah Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, Utah 84114

### Inspection Report For Well: UT20736 - 06521

U.S. Environmental Protection Agency Underground Injection Control Program, 8ENF-T 999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

		This form was	printed on 9/24/201	3	12		
INSPECTOR(S):	Lead: Roberts, Sa	arah			Date: 10	/ 142013	_
	Others: Ajayi, Cl	nristopher			Time:	150	_am / pm
OPERATOR (only	if different):						
REPRESENTATI	VE(S):		Chad St	renno	3		
	P	RE-INSPE	CTION RE	VIEW			
Petroglypl	o Operating Comp	any, Inc					
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## Inspection Report For Well: UT20736 - 06521 (PAGE 2)

comments and site conditions observed during inspection:  PS: GPS File ID:	PHOTOGRAPHS:	Yes No		,
		No		
	Comments and site	conditions	is observed during inspection:	
EPS: GPS File ID:				
PS: GPS File ID:				
PS: GPS File ID:				
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	GPS: GPS File ID: _			
ignature of EPA Inspector(s):	Signature of EPA Inspec	etor(s):	Delinim Shumi	
Data Entry Compliance Staff Hard Copy Filing				

#### NOTICE OF INSPECTION



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION VIII, 999 18TH STREET - SUITE 500 DENVER, COLORADO 80202-2405

Date: 12/16/13 Hour: 8:00a	Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).
Firm Name:	Petrochyph Operating Inc
Firm Address:	Roosevell, UT, Antelope (rest of Field)

#### REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water The Administrator or the Comptroller General (or source. any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title

Inspector's Name & Title (Print)

Inspector's Signature

**≎EPA** 

United States Environmental Protection Agency Washington, DC 20460

#### ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Pame and Address Petroglyph Open P.O. Box 7608 Boise, Idaho 837		isting Permittee ompany, Inc. 2258				Ute Indian P.O. Box 70		mer		
Locate Well Section Plat		utline Unit on		State C Utah		County Duchesne		rmit Nun JT2736-		
ocolion i iai	04071	N		Surface Location Description						
			]	1/4 of			of NW 1/4 of Sect			
			Locate well in two directions from nearest lines of quarter section and drilling unit  Surface  Location 660 ft. frm (N/S) N Line of quarter section  and 660 ft. from (E/W) W Line of quarter section.							
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<u> </u> _i_i				' ' '					UTE	TRIBAL 21-04
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February	16	1719		1735		1313			0	0
March	16	1728		1731		1350		100-00 (0.000 0.000 0.000	0	0
April	16	1720		1737		1220			0	0
May	16	1697		1724		1146		Apr-100-2014-00-2014	0	0
June	16	1713		1726		1161			0	0
July	16	1712		1723		1187		Special control of the control of th	0	0
August	16	1715		1730		1204			0	0
September	16	1703		1724		1047			0	0
October	16	1713		1728		1310			0	0
November	16	1682		1702		1006			0	0
December	16	1672		1684		1213			0	0

#### Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

		A	
Name and Official Title (Please type or print)	Signature		Date Signed
Chad Stevenson, Water Facilities Supervisor	Ine !	STL	03/21/2017

#### **Multi-Chem Analytical Laboratory**

1553 East Highway 40 Vernal, UT 84078 multi-chem

A HALLIBURTON SERVICE

Units of Measurement:

Standard

#### **Water Analysis Report**

**Production Company:** 

PETROGLYPH OPERATING CO INC - EBUS

Well Name: Sample Point:

Sample ID:

UTE TRIBAL 21-04 INJ, DUCHESNE

Well Head

Sample Date:

1/6/2017 WA-345300 Sales Rep:

**James Patry** 

Lab Tech:

Kaitlyn Natelli

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specific	cs		Ana
Test Date:	1/25/2017	Cations	r
System Temperature 1 (°F):	300	Sodium (Na):	
System Pressure 1 (psig):	2000	Potassium (K):	
System Temperature 2 (°F):	130	Magnesium (Mg):	
System Pressure 2 (psig):	50	Calcium (Ca):	
Calculated Density (g/ml):	1.0053	Strontium (Sr):	
pH:	8.60	Barium (Ba):	
Calculated TDS (mg/L):	11582.81	Iron (Fe):	
CO2 in Gas (%):		Zinc (Zn):	
Dissolved CO <sub>2</sub> (mg/L)):	0.00	Lead (Pb):	
H <sub>2</sub> S in Gas (%):		Ammonia NH3:	
H2S in Water (mg/L):	20.00	Manganese (Mn):	
Tot. SuspendedSolids(mg/L):		Aluminum (Al):	
Corrosivity(LanglierSat.Indx)	0.00	Lithium (Li):	
	0.00	Boron (B):	
Alkalinity:		Silicon (Si):	

Analysis @ Properties in Sample Specifics								
Cations	mg/L	Anions	mg/L					
Sodium (Na):	3925.33	Chloride (CI):	4500.00					
Potassium (K):	28.08	Sulfate (SO4):	70.00					
Magnesium (Mg):	15.82	Bicarbonate (HCO3):	2928.00					
Calcium (Ca):	56.82	Carbonate (CO3):						
Strontium (Sr):	5.75	Hydroxide(HO):						
Barium (Ba):	2.99	Acetic Acid (CH3COO)						
Iron (Fe):	13.06	Propionic Acid (C2H5COO)						
Zinc (Zn):	3.91	Butanoic Acid (C3H7COO)						
Lead (Pb):	0.04	Isobutyric Acid ((CH3)2CHCOO)						
Ammonia NH3:		Fluoride (F):						
Manganese (Mn):	0.34	Bromine (Br):						
Aluminum (Al):	1.89	Silica (SiO <sub>2</sub> ):	32.67					
Lithium (Li):	3.21	Calcium Carbonate (CaCO3):						
Boron (B):	5.77	Phosphates (PO4):	8.40					
Silicon (Si):	15.27	Oxygen (O2):						

Notes:

(PTB = Pounds per Thousand Barrels)

			cium onate	Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ
130.00	50.00	1.99	48.76	0.56	1.28	4.59	7.21	3.51	9.50	0.00	0.00	0.00	0.00	0.00	0.00	11.53	2.04
149.00	267.00	2.03	48.87	0.46	1.15	4.53	7.21	3.59	9.50	0.00	0.00	0.00	0.00	0.00	0.00	11.26	2.04
168.00	483.00	2.10	49.00	0.38	1.03	4.49	7.21	3.68	9.50	0.00	0.00	0.00	0.00	0.00	0.00	11.03	2.04
187.00	700.00	2.17	49.13	0.32	0.92	4.48	7.21	3.76	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.82	2.04
206.00	917.00	2.25	49.24	0.28	0.83	4.48	7.21	3.84	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.64	2.04
224.00	1133.00	2.34	49.34	0.25	0.77	4.51	7.21	3.91	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.49	2.04
243.00	1350.00	2.44	49.43	0.24	0.73	4.55	7.21	3.98	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.35	2.04
262.00	1567.00	2.54	49.50	0.23	0.72	4.61	7.21	4.04	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.23	2.04
281.00	1783.00	2.65	49.55	0.23	0.72	4.67	7.21	4.10	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.13	2.04
300.00	2000.00	2.76	49.60	0.24	0.74	4.75	7.21	4.15	9.50	0.00	0.00	0.00	0.00	0.00	0.00	10.04	2.04

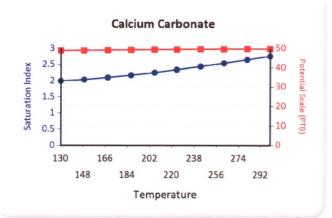


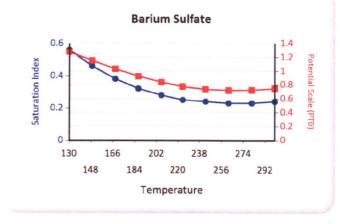
#### **Water Analysis Report**

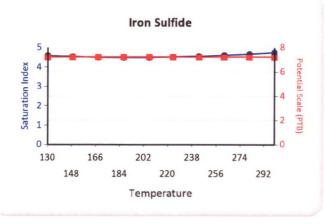
			Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	2.62	11.25	0.02	4.98	29.40	3.11	33.33	12.85	10.16	
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	2.63	10.81	0.02	5.68	30.30	3.48	35.66	13.26	10.16	
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92	2.63	10.41	0.02	6.40	30.88	3.86	37.95	13.70	10.16	
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.09	2.63	10.06	0.02	7.10	31.21	4.25	39.84	14.17	10.16	
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.24	2.63	9.75	0.02	7.80	31.39	4.64	41.30	14.63	10.16	
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.37	2.63	9.47	0.02	8.48	31.49	5.03	42.36	15.11	10.16	
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.48	2.63	9.22	0.02	9.15	31.54	5.41	43.07	15.58	10.16	
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.59	2.63	9.00	0.02	9.80	31.57	5.79	43.51	16.06	10.16	
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67	2.63	8.80	0.02	10.42	31.59	6.16	43.78	16.52	10.16	
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74	2.63	8.62	0.02	11.02	31.60	6.51	43.93	16.97	10.16	

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

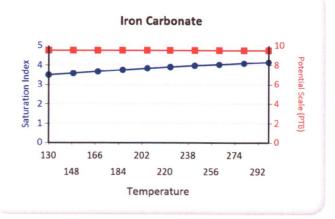
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate





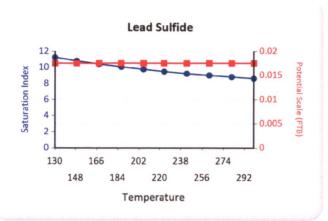


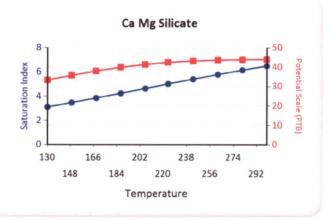
Commitment

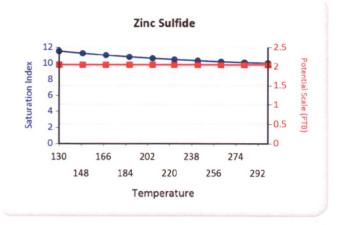


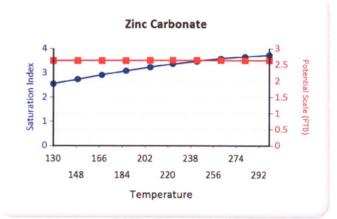


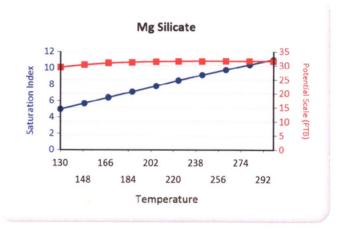
#### **Water Analysis Report**









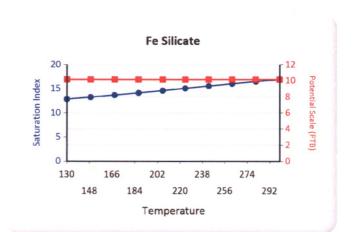


Excellence

1553 East Highway 40 Vernal, UT 84078



#### **Water Analysis Report**



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OMB No. 2040-0042 Approval Expires 11/30/2014 United States Environmental Protection Agency Washington, DC 20460 **SEPA** ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT Name and Address of Surface Owner Ute Indian Tribe Name and Address of Existing Permittee Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 P.O. Box 70 Boise, Idaho 83709 Ft. Duchesne, Utah, 84026 State County Permit Number Locate Well and Outline Unit on Utah Duchesne UT2736-04434-Section Plat - 640 Acres Surface Location Description 1/4 of NW 1/4 of NW 1/4 of Section 21 Township 5S Locate well in two directions from nearest lines of quarter section and drilling unit Location 660 ft. frm (N/S) N Line of quarter section and 660 ft. from (E/W) W Line of guarter section. WELL ACTIVITY TYPE OF PERMIT F 2/16 Individual Brine Disposal X Enhanced Recovery X Area Hydrocarbon Storage Number of Wells Well Number UTE TRIBAL 21-04 Lease Name Ute Indian Tribe S TUBING - CASING ANNULUS PRESSURE (OPTIONAL MONITORING) INJECTION PRESSURE TOTAL VOLUME INJECTED MONTH YEAR AVERAGE PSIG MAXIMUM PSIG BBI MINIMUM PSIG MAXIMUM PSIG 15 1612 1638 727 0 January February 15 1384 1586 176 0 0 March 15 629 1268 0 April 15 689 933 0 0 May 15 1320 1618 2097 0 0 15 1711 1738 2928 June 15 0 July 1722 1731 2134 15 1723 1738 1947 0 August 1726 1736 0 September 15 1666

#### Certification

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I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

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		4	and the same of th
Name and Official Title (Please type or print)	Signature	The second secon	Date Signed
Chad Stevenson, Water Facilities Supervisor	chil	CORFEN	02/08/2016 BLUE CBI
	THE RESERVE THE PERSON NAMED IN COLUMN	CONTRACTOR OF THE PROPERTY OF	THE RESIDENCE OF THE PARTY OF T

October

November

December

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# Petroglyph Operating Company, Inc. Annulus Pressure Cause and Mitigation Measures EPA Annual Injection Report for Reporting Period 2015

Well Name: Ute Tribal 21-04

UIC Permit Number: UT2736-06521

API Number: 43-013-31735

Cause of Pressure and Mitigation Measures:

This well lost mechanical integrity on February 8, 2015, and a rig was placed on the well from March 27<sup>th</sup> to April 6<sup>th</sup>, 2015. A successful Mechanical Integrity Test was submitted on April 13, 2015. Upon approval, injecting began May 7, 2015.

Please see copy of attached notice and successful MIT test submitted to EPA on April 13, 2015.



October 10, 2015

Don Breffle Mail Code: 8ENF-UFO US EPA Region 8 1595 Wyncoop Street Denver, CO 80202-1129

RE: Underground Injection Control (UIC)
Notice of Violation

Loss of Mechanical Integrity EPA Permit #UT2736-06521 Well No. Ute Tribal 21-04 Antelope Creek Oil Field Duchesne County, Utah

Dear Mr. Breffle:

Please be advised that on February 8, 2014 we lost Mechanical Integrity on the Ute Tribal 21-04 Injection Well. My direct number is 435-722-5302 if you wish to contact us.

Sincerely, Petroglyph Operating Company, Inc.

Rodrigo Jurado Regulatory Compliance Specialist







## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAR 0 2 2015

Ref: 8ENF-UFO

#### CERTIFIED MAIL 7009-3410-0000-2599-4814 RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc. 4116 W 3000 S Ioka Lane P.O. Box 607 Roosevelt, Utah 84066

Re:

Underground Injection Control (UIC)

Notice of Violation:

Loss of Mechanical Integrity

Ute Tribal 21-04 Well

EPA Permit ID# UT20736-06521

API # 43-013-31735 Antelope Creek Field Duchesne County, Utah

Dear Mr. Farnsworth:

On February 13, 2015, the Environmental Protection Agency (EPA) learned that the Petroglyph Operating Company, Inc. injection well referenced above lost mechanical integrity on February 8, 2015. Pursuant to the above-referenced UIC Permit and Title 40 of the Code of Federal Regulations Section 144.51(q)(1) (40 C.F.R. § 144.51(q)(1)), you must establish and maintain mechanical integrity. A loss of mechanical integrity is a violation of this requirement.

Pursuant to the above-referenced UIC Permit and the regulations at 40 C.F.R. § 144.51(q)(2), you must immediately cease injection into this well. Before injection may resume, you must demonstrate that the well has mechanical integrity by passing a mechanical integrity test (MIT). You must also receive written authorization from the EPA.

Within thirty (30) days of receipt of this letter, please submit a letter describing what action you intend to take regarding the well, including a time frame in which you anticipate the work to be completed. It is expected that you will return this well to compliance within ninety (90) days of the loss of mechanical integrity.

Form 3160-5 (August 2007)

#### UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB NO. 1004-0135 Expires: July 31, 2010

Lease Serial No. 1420H623516

SUNDRY NOTICES AND REPORTS ON WELLS	
Do not use this form for proposals to drill or to re-enter an	ı
abandoned well. Use form 3160-3 (APD) for such proposals	c

	s form for proposals to			6. If Indian, Allottee	or Tribo Name
abandoned we	II. Use form 3160-3 (API	D) for such proposals.		UINTAH AND C	
SUBMIT IN TRI	PLICATE - Other instruc	tions on reverse side.		7. If Unit or CA/Agre 1420H624650	ement, Name and/or No.
Type of Well	ner			8. Well Name and No. UTE TRIBAL 21-	
2. Name of Operator PETROGLYPH OPERATING	Contact: CO INC E-Mail: rjurado@p	RODRIGO JURADO gei.com		9. API Well No. 43-013-31735-0	DO-S1
3a. Address PO BOX 607 ROOSEVELT, UT 84066		3b. Phone No. (include area code Ph: 435-722-5302	;)	10. Field and Pool, or ANTELOPE CF	
4. Location of Well (Footage, Sec., T	., R., M., or Survey Description	)		11. County or Parish,	and State
Sec 21 T5S R3W NWNW 660	FNL 660FWL	•		DUCHESNE CO	OUNTY, UT
12. CHECK APPI	ROPRIATE BOX(ES) TO	) INDICATE NATURE OF	NOTICE, R	EPORT, OR OTHE	R DATA
TYPE OF SUBMISSION		ТҮРЕ О	F ACTION		
Notice of Intent	☐ Acidize	☐ Deepen	☐ Product	tion (Start/Resume)	■ Water Shut-Off
Notice of filterit	☐ Alter Casing	☐ Fracture Treat	☐ Reclam	ation	■ Well Integrity
☐ Subsequent Report	☐ Casing Repair	■ New Construction	☐ Recom	plete	Other
☐ Final Abandonment Notice	☐.Change Plans	☐ Plug and Abandon	□ Tempor	rarily Abandon	Workover Operations
	Convert to Injection	☐ Plug Back	■ Water I	Disposal	
12 0 1 0 1 0			1	1 1 1	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

On or about 3/30/2015, depending on equipment availability, Petroglyph Operating plans to work-over and re-perforate the referenced well. We plan to release the packer and pull all tubing, scan log on the way out, lay down all bad pipe, make a bit and scraper run to PBTD and circulate the well. Existing perforations are as follows: 5698-02, 5520-24, 5479-85, 5445-51, 5139-44, 4882-87, 4837-40, 4779-82 & 4741-48. We will re-perforate existing perforations and add new perforations. We plan to shoot the following: 5684-5703, 5535-40, 5514-24, 5476-86, 5443-56, 5149-53, 5138-46, 4882-86, 4835-72, 4776-84 & 4740-49. We will break down perfs, test their injection rates, run in with an Arrowset 1 Packer and perform a Mechanical Integrity Test. Injection will resume after EPA Approval is received. Guns: Titan 3-1/8" cont 22.7 gram charges, 0.42"EHD, 23.54" TTP @ 4 SPF @ 120\* phased.

14. I hereby certify that t	he foregoing is true and correct.  Electronic Submission #295870 verifie  For PETROGLYPH OPERATIN  Committed to AFMSS for processing by JOH	IG ČO I	NC. sent to the Vernal				
Name (Printed/Typed)	RODRIGO JURADO	Title	GENERAL CONTACT	······································			
Signature	(Electronic Submission)	Date	03/24/2015				
	THIS SPACE FOR FEDERA	AL OR	STATE OFFICE USE				
_Approved By_JERRY_	KENCZKA	Title/	FM FOR MINERAL RESOURCES	Date 03/31/2015			
certify that the applicant ho	iny, are attached. Approval of this notice does not warrant or ilds legal or equitable title to those rights in the subject lease plicant to conduct operations thereon.	Office Vernal					

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5 (August 2007)

## UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB NO. 1004-0135 Expires: July 31, 2010

	NOTICES AND REPOR		LLS		<ol> <li>Lease Serial No. 1420H623516</li> </ol>				
SUBMIT IN TRII	PLICATE - Other instruc	tions on rev	erse side.		7. If Unit or CA/Agree 1420H624650	ment, Name and/or No.			
Type of Well     □ Gas Well □ Oth	er		· · · · ·		8. Well Name and No. UTE TRIBAL 21-0	4			
2. Name of Operator	Contact:	RODRIGO JU	JRADO		9. API Well No. 43-013-31735-0	0-S1			
3a. Address PO BOX 607 ROOSEVELT, UT 84066				·)	10. Field and Pool, or Exploratory ANTELOPE CREEK				
	, R., M., or Survey Description)				11. County or Parish, a	and State			
Sec 21 T5S R3W NWNW 660	FNL 660FWL			,	DUCHESNE CC	OUNTY, UT			
12. CHECK APPF	ROPRIATE BOX(ES) TO	INDICATE	NATURE OF	NOTICE, RI	EPORT, OR OTHER	R DATA			
TYPE OF SUBMISSION			ТҮРЕ О	F ACTION	TION				
Notice of Intent	☐ Acidize	Deep	en	☐ Product	ion (Start/Resume)	■ Water Shut-Off			
inotice of Intent	☐ Alter Casing	☐ Frac	ture Treat	☐ Reclam	ation	■ Well Integrity			
Subsequent Report	□ Casing Repair	□ New	Construction	Recomp	olete	<b>⊠</b> Other			
☐ Final Abandonment Notice	□ Change Plans	Plug	and Abandon	□ Tempor	arily Abandon	Workover Operations			
	☐ Convert to Injection	🗖 Plug	Back	■ Water I	Disposal				
Attach the Bond under which the wor following completion of the involved testing has been completed. Final Abdetermined that the site is ready for five View I aid down 121 joints. We procreated and cleaned the we 5,684?-5,703?, 5,535?-40?, 5,4,835?-42?, 4,776?-84?, 4,74! tools and ran in with a new Arrway in. We set the packer, precasing to 1800 psi with no lose containing 19 grams charges, EPA for approval to resume in	k will be performed or provide operations. If the operation respendence that inspection.)  Eleased the packer, pulled bicked up new tubing, machine the ran in hole and 514?-24?, 5,476?-86?, 5,0?-49? We isolated vario rowset 1 Packer and new essure tested the tubing as Perforations were made 0.44? EHD, 23.54? TTP, jection.	the Bond No. or ults in a multipled only after all red to bit and side a bit and successfue using were	file with BLM/BL completion or recequirements, included scan logged craper run to Plot the following: 149?-53?, 5,13 proke down pering and doping ly performed at 1 itan 3-1/8? per	A. Required sul ompletion in a liding reclamation on the way of BTD, 5955? 18?-46?, 4,88 fs then pulled all joints on an MIT on the founs	osequent reports shall be new interval, a Form 3166, have been completed, a put.  chen  2?-86?,  all  the	filed within 30 days 0-4 shall be filed once			
, ,	Electronic Submission #2 For PETROGLYF	PH OPERATIN	G ĆO INC, sent NETTA MAGEE	to the Vernal on 04/17/2015	(15JM0562SE)				
Name (Printed/Typed) RODRIGO	JURADO		Title GENE	RAL CONTA	СТ				
Signature (Electronic S	Submission)		Date 04/13/2	2015		_			
BUNDRY NOTICES AND REPORTS ON WELLS  Do not use this fine from for prosposals to defill or to re-enter an abandone well. Use form 3160-3 (APD) for such proposals.  SUBMIT IN TRIPLICATE - Other instructions on reverse side.  1. Type of Well  BOUWET Gas Well Gost Well Other  Center: RODRIGO JURADO PRETRINGLYPH OPERATING CO INC E-Mail: flyunds@gget.com PAST-72-5302 PRETRIPLICATE - OR FRIEND - STATE - OR FRIEND - OR FRIEND - STATE - OR FRIEND									
Approved By ACCEPT	ED		ACCEPT TitleACCEPT	ED ED		Date 05/22/2015			
Conditions of approval, if any, are attache certify that the applicant holds legal or equ	iitable title to those rights in the		Office Vernal						
					ake to any department or	agency of the United			

Don Breffle Mail Code: 8ENF-UFO US EPA Region 8 1595 Wyncoop Street Denver, CO 80202-1129

RE: Underground Injection Control (UIC)
Notice of Violation
Loss of Mechanical Integrity
EPA Permit # UT2736-06521
Well No. Ute Tribal 21-04
Antelope Creek Oil Field
Duchesne County, Utah

Dear Mr. Breffle:

Please be advised, this is the action we plan to take to fix the loss of integrity on the 21-04 injector: we are going to release the packer and pull the tubing, inspecting the tubing as it comes out of the hole, make a bit and scraper run past the perforations, and circulate and clean the well. We will re-perforate existing perforations and add new perforations. Existing perforations are the following: 5698-5702, 5520-24, 5479-85, 5445-51, 5139-44, 4882-87, 4837-40, 4779-82 & 4741-48. We plan to shoot the following: 5684-5703, 5535-40, 5514-24, 5476-86, 5443-56, 5149-53, 5138-46, 4882-86, 4835-72, 4776-84 & 4740-49. We will break down perfs, test their injection rates, then run in an Arrowset 1 Packer and perform an MIT on the casing to 1900psi. We will submit the results of the MIT for approval to re-inject. This work is expected to begin as soon as equipment becomes available. My direct number is 435-722-5302 if you wish to contact us.

Sincerely, Petroglyph Operating Company, Inc.

Rodrigo Jurado Regulatory Compliance Specialist EPA ATTN: Don Breffle Region 8 1595 Wyncoop Street Denver, CO 80202-8917

UIC Permit #UT2736-06521 Well ID: Ute Tribal 21-04 Ute Tribal No. 21-04, Duchesne County, Utah

Dear Mr. Breffle,

Please find enclosed the successful MIT test for the above referenced well. This test was performed to provide proof of integrity after we rigged up on the well to address a loss of mechanical integrity and perform workover operations.

On 3/26/2015 we rigged up, released the packer, pulled the tubing and scan logged on the way out. We laid down 121 joints of pipe. We picked up new tubing, made a bit and scraper run to PBTD, 5955' then circulated and cleaned the well. We then ran in hole and re-perforated the following: 5,684'-5,703', 5,535'-40', 5,514'-24', 5,476'-86', 5,443'-56', 5,149'-53', 5,138'-46', 4,882'-86', 4,835'-42', 4,776'-84', 4,740'-49'. We isolated various intervals, broke down perfs then pulled all tools and ran in with a new Arrowset 1 Packer and new tubing, breaking and doping all joints on the way in. We pressure tested the tubing and successfully performed an MIT on the casing to 1800 psi with no loss. Perforations were made using were Titan 3-1/8" perf guns containing 19 grams charges, 0.44" EHD, 23.54" TTP, 4 SPF @ 120° Phased.

Please let us know if there is a need for further action on our part and we will immediately comply. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,

Rodrigo Jurado Regulatory Compliance Spc

Encl: MIT

## **Mechanical Integrity Test** Tubing/Casing Annulus Pressure Test U.S. Environmental Protection Agency Underground Injection Control Program

	1595 Wynkoop Street, D	Jenver, CO 80202							
EPA Witness: Test conducted by: Ch Others present:	+ADSTEVENSOR	Date: <u>4 / 9</u>	1/5						
Well Name: 2 - 0 4 Type: ER SWD Status: AC TA UC Field: ANDELOPE CREEK Location: 21-04 Sec: T N/S R E/W County: DUCHETWE State: UT Operator: PETRICLAPH EWERY Last MIT: / Maximum Allowable Pressure: PSIG  Regularly scheduled test? [] Yes [] No Initial test for permit? [] Yes [] No Test after well rework? Yes [] No Well injecting during test? If Yes, rate: bpd Pre-test annulus pressure: psig  MIT DATA TABLE Test #1 Test #2 Test #3									
Luci IIII		/Wabio 1 1000di C.							
Initial test for permit? [ ] Yes [ ] No Test after well rework? Yes [ ] No  Well injecting during test? If Yes, rate: bpd									
MIT DATA TABLE	Test #1	Test #2	Test #3						
TUBING		PRESSURE	RECORD						
Initial Pressure	750 psig	psig	psig						
End of test pressure	7 <i>50</i> psig	psig	psig						
CASING / TUBING		PRESSURE	STOORS IN						
	ANNULUS	PRESSURE	RECORD						
0 minutes	1770 psig	PRESSURE psig	<b>RECORD</b> psig						
	. 22		en e						
0 minutes	1870 psig	psig	psig						
0 minutes 5 minutes 10 minutes 15 minutes	/770 psig /770 psig /770 psig	psig psig	psig psig psig						
0 minutes 5 minutes 10 minutes 15 minutes 20 minutes	/770 psig /770 psig /770 psig	psig psig psig	psig psig psig psig						
0 minutes 5 minutes 10 minutes 15 minutes	/ / / / psig / / / / / psig	psig psig psig psig	psig						

psig

psig

[ ]Fail [ ] Pass

Does the annulus pressure build back up after the test? If Yes,

[ ] Pass

HUN minutes

RESULT

minutes

psig

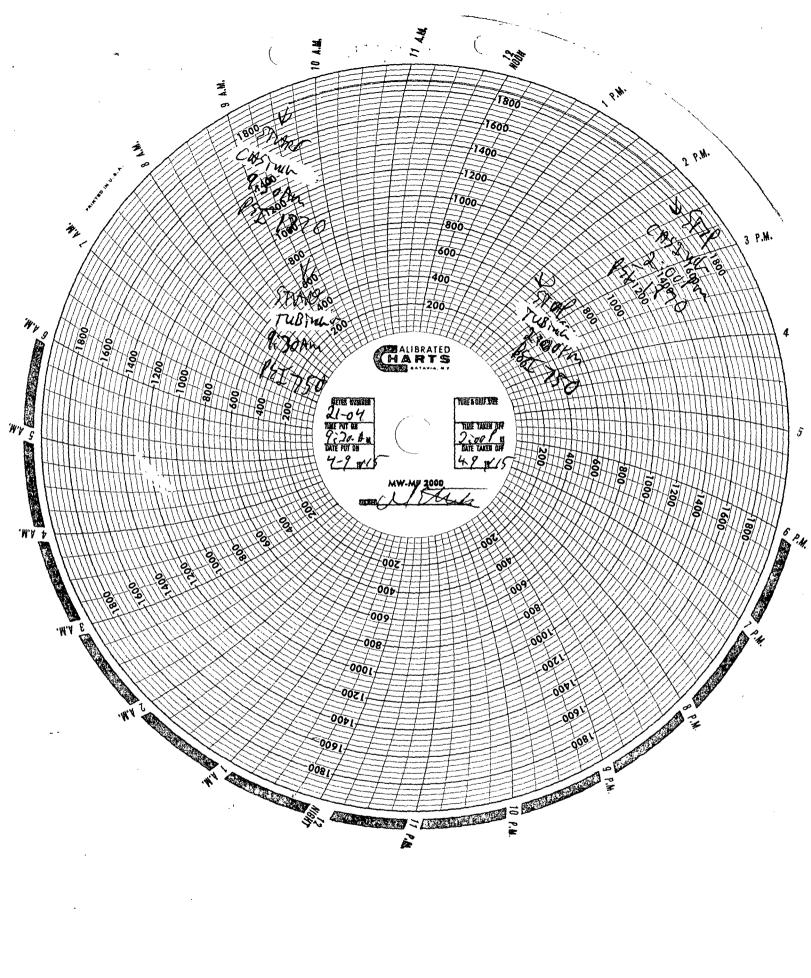
psig

[ ]Fail

psig

psig

[ ]Fail [ ] Pass





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

MAY 0 6 2015

Ref: 8ENF-UFO

CERTIFIED MAIL 7009-3410-0000-2599-4944 RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor Petroglyph Operating Company, Inc. 4116 W 3000 S Ioka Lane P.O. Box 607 Roosevelt, Utah 84066

Re: Underground Injection Control (UIC)

Permission to Resume Injection

Ute Tribal 21-04 Well

EPA Permit ID# UT20736-06521

API # 43-013-31735 Antelope Creek Oil Field Duchesne County, Utah

Dear Mr. Farnsworth:

On April 17, 2015, the Environmental Protection Agency (EPA) received information from Petroglyph Operating Company, Inc. on the above referenced well concerning the workover to address a loss of mechanical integrity and the followup mechanical integrity test (MIT) conducted on April 9, 2015. The data submitted shows that the well passed the required MIT. Therefore, pursuant to Title 40 of the Code of Federal Regulations Section 144.51(q)(2) (40 C.F.R. § 144.51(q)(2)), permission to resume injection is granted. Under continuous service, the next MIT will be due on or before April 9, 2020.

Pursuant to 40 C.F.R. § 144.52(a)(6), if the well is not used for a period of at least two (2) years ("temporary abandonment"), it shall be plugged and abandoned unless the EPA is notified and procedures are described to the EPA ensuring the well will not endanger underground sources of drinking water ("non-endangerment demonstration") during its continued temporary abandonment. A successful MIT is an acceptable non-endangerment demonstration and would be necessary every two (2) years the well continues in temporary abandonment.

Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. § 300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.

If you have any questions concerning this letter, you may contact Gary Wang at (303) 312-6469. Please direct all correspondence to the attention of Gary Wang at Mail Code 8ENF-UFO.

Sincerely,

Afturo Palomares, Director
Water Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

cc: Gordon Howell, Chairman, Uintah & Ouray Business Committee
Ronald Wopsock, Vice-Chairman, Uintah & Ouray Business Committee
Reannin Tapoof, Executive Assistant, Uintah & Ouray Business Committee
Stewart Pike, Councilman, Uintah & Ouray Business Committee
Tony Small, Councilman, Uintah & Ouray Business Committee
Bruce Ignacio, Councilman, Uintah & Ouray Business Committee
Phillip Chimburas, Councilman, Uintah & Ouray Business Committee
Manuel Myore, Director of Energy, Minerals and Air Programs
Brad Hill, Utah Division of Oil, Gas and Mining

#### **Multi-Chem Analytical Laboratory**

1553 East Highway 40 Vernal, UT 84078



multi-chem<sup>a</sup>

Units of Measurement: Standard

#### **Water Analysis Report**

**Production Company:** 

PETROGLYPH OPERATING CO INC - EBUS

Well Name:

**UTE TRIBAL 21-04 INJ, DUCHESNE** 

Sample Point:

Well Head

Sample Date: Sample ID:

1/6/2016 WA-327631 Sales Rep: **James Patry** 

> Lab Tech: Michele Pike

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specif	fics	
Test Date:	1/14/2016	
System Temperature 1 (°F):	60	So
System Pressure 1 (psig):	2000	Ро
System Temperature 2 (°F):	180	Ма
System Pressure 2 (psig):	50	Ca
Calculated Density (g/ml):	1.0014	Str
pH:	6.80	Ва
Calculated TDS (mg/L):	5824.68	Iro
CO2 in Gas (%):		Zir
Dissolved CO <sub>2</sub> (mg/L)):	60.00	Le
H <sub>2</sub> S in Gas (%):		An
H2S in Water (mg/L):	0.00	Ma
Tot. SuspendedSolids(mg/L):		Alı
Connectivity (Longling Cat. In div)		Lit
Corrosivity(LanglierSat.Indx)	0.00	Во
Alkalinity:		Sili
	Complete Control of the Control of t	

	Analysis @ Prop	perties in Sample Specifics	
Cations	mg/L	Anions	mg/L
Sodium (Na):	1703.50	Chloride (CI):	2500.00
Potassium (K):	0.63	Sulfate (SO4):	510.00
Magnesium (Mg):	85.82	Bicarbonate (HCO3):	732.00
Calcium (Ca):	191.61	Carbonate (CO3):	
Strontium (Sr):	5.51	Acetic Acid (CH3COO)	
Barium (Ba):	0.20	Propionic Acid (C2H5COO)	
Iron (Fe):	53.39	Butanoic Acid (C3H7COO)	
Zinc (Zn):	11.15	Isobutyric Acid ((CH3)2CHCOO)	
Lead (Pb):	0.46	Fluoride (F):	
Ammonia NH3:		Bromine (Br):	
Manganese (Mn):	0.18	Silica (SiO2):	30.23
Aluminum (AI):	0.12	Calcium Carbonate (CaCO3):	
Lithium (Li):	0.77	Phosphates (PO4):	3.51
Boron (B):	0.63	Oxygen (O2):	
Silicon (Si):	14.13		

Notes:

#### (PTB = Pounds per Thousand Barrels)

			cium oonate	Barium	n Sulfate		on Ifide		ron onate		psum 4·2H2O		estite SO4		alite aCl		linc Ifide
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ
180.00	50.00	0.71	65.07	0.17	0.04	0.00	0.00	2.27	38.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.54	50.70	0.19	0.04	0.00	0.00	2.08	38.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.43	41.12	0.22	0.05	0.00	0.00	1.95	38.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.33	31.70	0.26	0.05	0.00	0.00	1.81	37.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.23	22.54	0.31	0.06	0.00	0.00	1.68	37.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.14	13.77	0.38	0.07	0.00	0.00	1.55	36.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.06	5.49	0.45	0.08	0.00	0.00	1.42	36.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	0.54	0.08	0.00	0.00	1.29	35.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.65	0.09	0.00	0.00	1.17	34.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.78	0.10	0.00	0.00	1.05	33.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

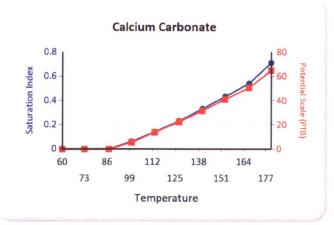


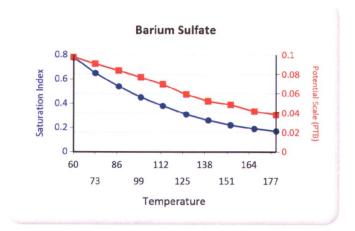
#### **Water Analysis Report**

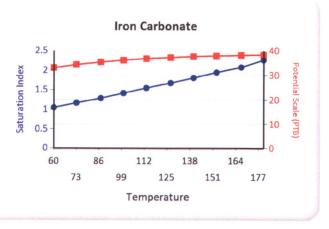
		Hemihydrate CaSO4~0.5H2O					Calcium Zinc Fluoride Carbonate		Lead Mg Sulfide Silicate			Ca Mg Silicate		Fe Silicate			
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	7.29	0.00	0.00	0.08	1.48	0.00	0.00	6.58	40.07
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	7.14	0.00	0.00	0.00	0.00	0.00	0.00	5.58	38.54
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	6.94	0.00	0.00	0.00	0.00	0.00	0.00	4.91	36.90
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	6.61	0.00	0.00	0.00	0.00	0.00	0.00	4.26	34.64
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	6.08	0.00	0.00	0.00	0.00	0.00	0.00	3.62	31.67
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	5.18	0.00	0.00	0.00	0.00	0.00	0.00	2.99	27.98
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	3.67	0.00	0.00	0.00	0.00	0.00	0.00	2.39	23.61
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	1:13	0.00	0.00	0.00	0.00	0.00	0.00	1.80	18.64
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	13.22
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	7.48

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Barium Sulfate Iron Carbonate Fe Silicate

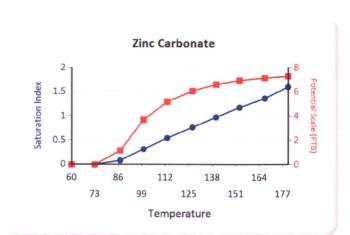


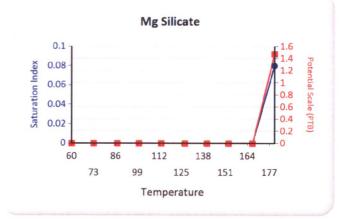


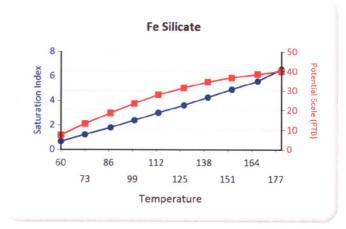




#### **Water Analysis Report**









February 10, 2016

Underground Injection Control Enforcement U.S. Environmental Protection Agency Atten: Don Breffle / Gary Wang 1595 Wynkoop St. Denver, CO 80202 RECEIVED

FEB 17 2016

Office of Enforcement, Compliance and Environmental Justice (UFQ)

Mr. Breffle and Mr. Wang:

Please find enclosed the following annual reporting materials from Petroglyph Operating Company, Inc., for its Antelope Creek Water Flood Program, Permit Number UT2736-00000:

- Annual Disposal/Injection Well Monitoring Report for each of the 111 wells
- Related supporting documentation, to include copies of notices and successful Mechanical Integrity Tests
- Water Analysis reports

During 2015, POCI experienced a loss of mechanical integrity in the following wells:

- Ute Tribal 05-08
- Ute Tribal 05-10
- Ute Tribal 19-11
- Ute Tribal 21-04
- Ute Tribal 21-15
- Ute Tribal 29-12
- Ute Tribal 33-14D3

All wells were subsequently repaired and passed a Mechanical Integrity Test. Approvals were received for all wells.

Maximum Allowable Injection Pressure was exceeded for the Ute Tribal 16-07 (October 2015), Ute Tribal 18-14 (August 2015), Ute Tribal 29-12 (May-June 2015) as a result of performing step rate tests.

Thank you for your time. If any questions, please contact me at the following number: (208) 685-9711.

Best Regards,

Nicole Colby

Manager, Land & Regulatory Compliance; Petroglyph Energy, Inc.

United States Environmental Protection Agency Washington, DC 20460

#### ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee Petroglyph Operating Company, Inc. 2258 P.O. Box 7608

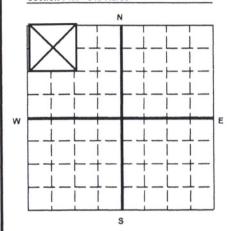
Boise, Idaho 83709

Name and Address of Surface Owner Ute Indian Tribe

P.O. Box 70

Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State County Permit Number Utah Duchesne UT2736-06521 Surface Location Description

1/4 of NW 1/4 of NW 1/4 of Section 21 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Location 660 ft. frm (N/S) N Line of quarter section and 660 ft, from (E/W) W Line of quarter section.

WELL ACTIVITY

TYPE OF PERMIT

Brine Disposal

Individual

X Enhanced Recovery

X Area

Hydrocarbon Storage

Number of Wells 111

Lease Name Ute Indian Tribe

Well Number UTE TRIBAL 21-04

INJECTION	PRESSURE
HIGEOHOIT	LICEOGOICE

#### TOTAL VOLUME IN IECTED

#### TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)

		INJECTION	PRESSURE	TOTAL VOLUM	IE INJECTED	(OPTIONAL MONITORING)		
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG	
January	14	1692	1708	1391		0	0	
February	14	1712	1723	1274		0	0	
March	14	1708	1719	1347		0	0	
April	14	1725	1741	1402		0	0	
May	14	1678	1711	1180		0	0	
June	14	1690	1716	1075		0	0	
July	14	1643	1724	983		0	0	
August	14	1675	1674	1190		0	0	
Septemb	er 14	1580	1694	1064		0	0	
October	14	1670	1699	1109		0	0	
Novemb	er 14	1699	1703	1165		0	0	
Decemb	er 14	1688	1712	1093		0	0	

#### Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Chad Stevenson, Water Facilities Supervisor

Signatur

**Date Signed** 

2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered Date 3/31/16
Initial w

	GREEN	BLUE	CBI
TAB		2	

#### **Multi-Chem Analytical Laboratory**

1553 East Highway 40 Vernal, UT 84078

### multi-chem'

A HALLIBURTON SERVICE

Units of Measurement:

Standard

#### Water Analysis Report

**Production Company:** 

**PETROGLYPH OPERATING CO INC - EBUS** 

Well Name:

**UTE TRIBAL 21-04 INJ, DUCHESNE** 

Sample Point:

WELLHEAD

Sample Date: Sample ID:

1/7/2015 WA-297481 Sales Rep:

**James Patry** 

Lab Tech:

**Gary Winegar** 

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specific	S	
Test Date:	1/14/2015	-
System Temperature 1 (°F):	<b>160</b> S	ċ
System Pressure 1 (psig):	1300 F	
System Temperature 2 (°F):	80 1	١
System Pressure 2 (psig):	15	•
Calculated Density (g/ml):	1.0038	
pH:	8.50 B	3
Calculated TDS (mg/L):	9669.52	r
CO2 in Gas (%):	z	•
Dissolved CO2 (mg/L)):	0.00	
H <sub>2</sub> S in Gas (%):		١
H2S in Water (mg/L):	20.00 N	·

Analysis @ Properties in Sample Specifics									
Cations	mg/L	Anions	mg/L						
Sodium (Na):	3111.07	Chloride (Cl):	4000.00						
Potassium (K):	50.86	Sulfate (SO4):	232.00						
Magnesium (Mg):	12.28	Bicarbonate (HCO3):	2196.00						
Calcium (Ca):	22.98	Carbonate (CO3):							
Strontium (Sr):	4.89	Acetic Acid (CH3COO)							
Barium (Ba):	2.35	Propionic Acid (C2H5COO)							
Iron (Fe):	15.12	Butanoic Acid (C3H7COO)							
Zinc (Zn):	1.40	Isobutyric Acid ((CH3)2CHCOO)							
Lead (Pb):	0.00	Fluoride (F):							
Ammonia NH3:		Bromine (Br):							
Manganese (Mn):	0.16	Silica (SiO2):	20.41						

Notes:

B=7.52 Al=.03 Li=1.39

(PTB = Pounds per Thousand Barrels)

		2012/2018/2018	cium oonate	Bariur	n Sulfate		ron Ifide		ron oonate		psum 4-2H2O	March Street Control	estite SO4	ROBS DESCRIPTION OF A	alite IaCl	800000000000000000000000000000000000000	Zinc ulfide
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ
80.00	14.00	1.37	18.87	1.41	1.35	4.84	8.34	3.09	10.98	0.00	0.00	0.00	0.00	0.00	0.00	11.89	0.73
88.00	157.00	1.37	18.86	1.33	1.33	4.75	8.34	3.12	10.98	0.00	0.00	0.00	0.00	0.00	0.00	11.70	0.73
97.00	300.00	1.38	18.90	1.25	1.32	4.69	8.34	3.16	10.98	0.00	0.00	0.00	0.00	0.00	0.00	11.54	0.73
106.00	443.00	1.40	18.94	1.18	1.31	4.64	8.34	3.21	10.99	0.00	0.00	0.00	0.00	0.00	0.00	11.38	0.73
115.00	585.00	1.42	18.99	1.11	1.29	4.59	8.34	3.25	10.99	0.00	0.00	0.00	0.00	0.00	0.00	11.23	0.73
124.00	728.00	1.44	19.05	1.05	1.28	4.55	8.34	3.29	10.99	0.00	0.00	0.00	0.00	0.00	0.00	11.10	0.73
133.00	871.00	1.46	19.10	1.00	1.26	4.52	8.34	3.33	10.99	0.00	0.00	0.00	0.00	0.00	0.00	10.97	0.73
142.00	1014.00	1.48	19.15	0.95	1.24	4.50	8.34	3.37	10.99	0.00	0.00	0.00	0.00	0.00	0.00	10.85	0.73
151.00	1157.00	1.50	19.21	0.91	1.23	4.48	8.34	3.41	10.99	0.00	0.00	0.00	0.00	0.00	0.00	10.73	0.73
160.00	1300.00	1.53	19.27	0.87	1.21	4.47	8.34	3.45	10.99	0.00	0.00	0.00	0.00	0.00	0.00	10.63	0.73
			hydrate ~0.5H2O		ydrate aSO4	Market Services	cium oride		inc oonate	acareaan none il	ead Ifide	######################################	Mg icate	0.0000000000000000000000000000000000000	a Mg icate	Si	Fe licate
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	_ SI	РТВ	SI	РТВ
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.89	0.00	0.00	1.09	6.85	0.22	1.90	10.19	11.75
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.90	0.00	0.00	1.39	8.25	0.36	2.78	10.31	11.75
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.91	0.00	0.00	1.75	9.98	0.54	3.91	10.51	11.75
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.64	0.92	0.00	0.00	2.11	11.61	0.74	4.99	10.71	11.75
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.93	0.00	0.00	2.48	13.14	0.93	6.02	10.93	11.75

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Friday, January 16, 2015

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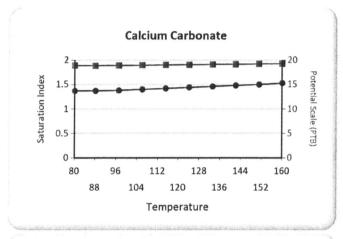
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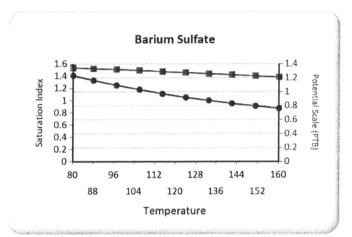
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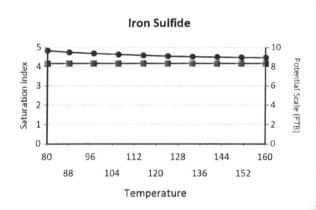
#### Water Analysis Report

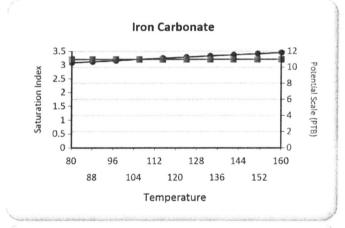
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

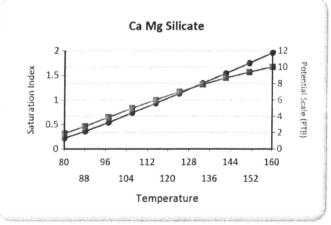
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

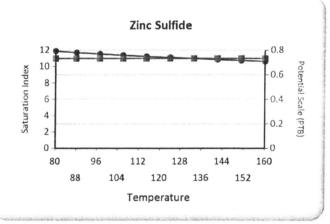








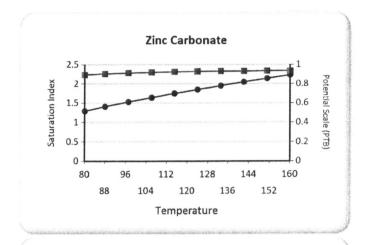


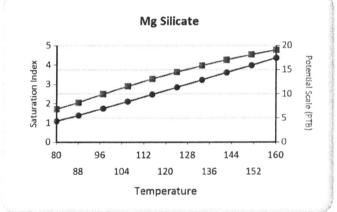


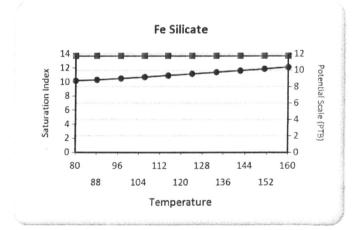
Ethics

Water Analysis Report









March 24, 2015

#### RECEIVED

MAR 3 0 2015

Office of Enforcement, Compliance and Environmental Justice (UFO)

Don Breffle Mail Code: 8ENF-UFO US EPA Region 8 1595 Wyncoop Street Denver, CO 80202-1129

RE: Underground Injection Control (UIC)
Notice of Violation
Loss of Mechanical Integrity
EPA Permit # UT2736-06521
Well No. Ute Tribal 21-04
Antelope Creek Oil Field
Duchesne County, Utah

Dear Mr. Breffle:

Please be advised, this is the action we plan to take to fix the loss of integrity on the 21-04 injector: we are going to release the packer and pull the tubing, inspecting the tubing as it comes out of the hole, make a bit and scraper run past the perforations, and circulate and clean the well. We will re-perforate existing perforations and add new perforations. Existing perforations are the following: 5698-5702, 5520-24, 5479-85, 5445-51, 5139-44, 4882-87, 4837-40, 4779-82 & 4741-48. We plan to shoot the following: 5684-5703, 5535-40, 5514-24, 5476-86, 5443-56, 5149-53, 5138-46, 4882-86, 4835-72, 4776-84 & 4740-49. We will break down perfs, test their injection rates, then run in an Arrowset 1 Packer and perform an MIT on the casing to 1900psi. We will submit the results of the MIT for approval to re-inject. This work is expected to begin as soon as equipment becomes available. My direct number is 435-722-5302 if you wish to contact us.

Sincerely, Petroglyph Operating Company, Inc.

Rødrigo Jurado

Regulatory Compliance Specialist

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#### RECEIVED

APR 1 7 2015

Office of Enforcement, Compliance and Environmental Justice (UFO)

April 13, 2015

**EPA** 

ATTN: Don Breffle Region 8 1595 Wyncoop Street Denver, CO 80202-8917

UIC Permit #UT2736-06521 Well ID: Ute Tribal 21-04 Ute Tribal No. 21-04, Duchesne County, Utah

Dear Mr. Breffle,

Please find enclosed the successful MIT test for the above referenced well. This test was performed to provide proof of integrity after we rigged up on the well to address a loss of mechanical integrity and perform workover operations.

On 3/26/2015 we rigged up, released the packer, pulled the tubing and scan logged on the way out. We laid down 121 joints of pipe. We picked up new tubing, made a bit and scraper run to PBTD, 5955' then circulated and cleaned the well. We then ran in hole and re-perforated the following: 5,684'-5,703', 5,535'-40', 5,514'-24', 5,476'-86', 5,443'-56', 5,149'-53', 5,138'-46', 4,882'-86', 4,835'-42', 4,776'-84', 4,740'-49'. We isolated various intervals, broke down perfs then pulled all tools and ran in with a new Arrowset 1 Packer and new tubing, breaking and doping all joints on the way in. We pressure tested the tubing and successfully performed an MIT on the casing to 1800 psi with no loss. Perforations were made using were Titan 3-1/8" perf guns containing 19 grams charges, 0.44" EHD, 23.54" TTP, 4 SPF @ 120° Phased.

Please let us know if there is a need for further action on our part and we will immediately comply. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,

Rodrigo Jurado

Regulatory Compliance Spc

Encl: MIT

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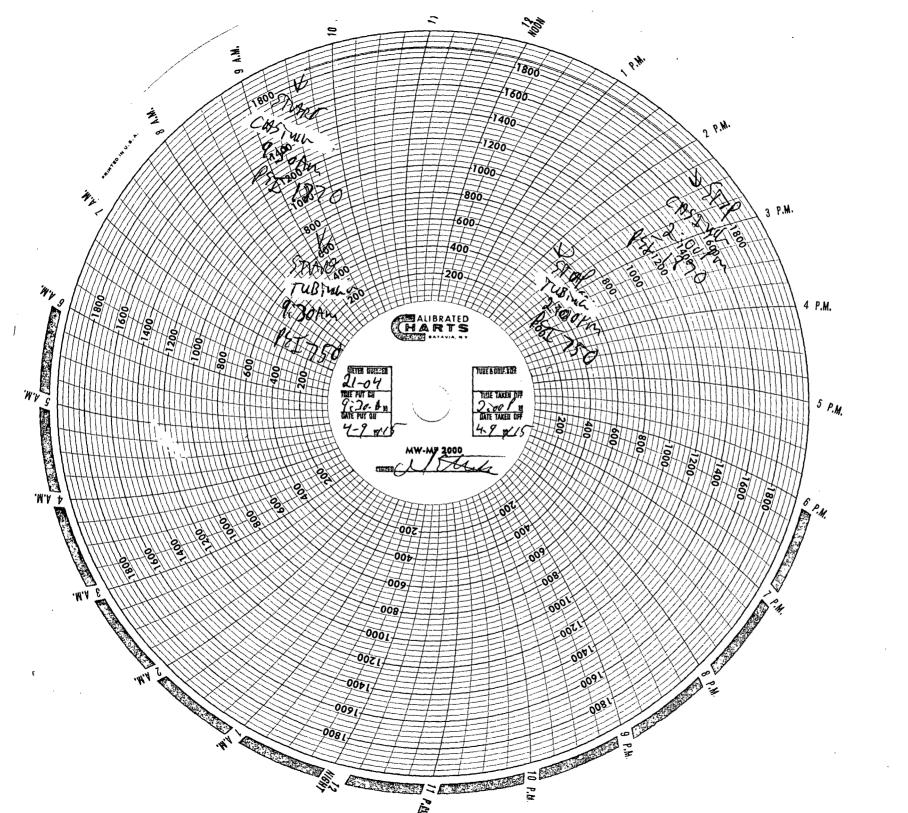
Date 4/2/15

Initial

# **Mechanical Integrity Test** Tubing/Casing Annulus Pressure Test U.S. Environmental Protection Agency Underground Injection Control Program 1595 Wynkoop Street, Denver, CO 80202

EPA Witness:	Date: <u>4 1 9 1 1 5</u>
Others present.	
Well Name: 21-04	Type: ER SWD Status: AC TA UC
Field: ANTELOPE CREEK	
Location: 21-04 Sec: T_N/S R	E/W County: DUCHETNE State: UT
Operator: PETROCLUPH ENERY	
Last MIT: / Maximum Alle	owable Pressure: PSIG
Regularly scheduled test?	[ ] Yes
Initial test for permit?	• • •
Test after well rework?	Yes [ ] No
Well injecting during test? If Yes, rate:	bpd
Pro-tost annulus prossura:	neia

MIT DATA TABLE	Test #1	Test #2	Test #3		
TUBING		PRESSURE	RECORD		
Initial Pressure	7 <i>50</i> psig	psig	psig		
End of test pressure	7 <i>50</i> psig	psig	psig		
CASING / TUBING	ANNULUS	PRESSURE	RECORD		
0 minutes	1770 psig	psig	psig		
5 minutes	<i>j770</i> psig	psig	psig		
10 minutes	1770 psig	psig	psig		
15 minutes	1770 psig	psig	psig		
20 minutes	1870 psig	psig	psig		
25 minutes	(770 psig	psig	psig		
30 minutes	( ) ? O psig	psig	psig		
4 Hurs minutes	1770 psig	psig	psig		
minutes	psig	psig	psig		
RESULT	[ ] Pass     [ ]Fail	[ ] Pass [ ]Fail	[ ] Pass [ ]Fail		



October 10, 2015

Don Breffle Mail Code: 8ENF-UFO US EPA Region 8 1595 Wyncoop Street Denver, CO 80202-1129

RE: Underground Injection Control (UIC)
Notice of Violation
Loss of Mechanical Integrity
EPA Permit #UT2736-06521
Well No. Ute Tribal 21-04
Antelope Creek Oil Field

Duchesne County, Utah

Dear Mr. Breffle:

Please be advised that on February 8, 2014 we lost Mechanical Integrity on the Ute Tribal 21-04 Injection Well. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,

Petroglyph Operating Company, Inc.

Rødrigo Jurado

Regulatory Compliance Specialist

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United States Environmental Protection Agency Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT Name and Address of Existing Permittee Name and Address of Surface Owner Ute Indian Tribe Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 P.O. Box 70 Ft. Duchesne, Utah 84026 Boise, Idaho 83709 State County Permit Number Locate Well and Outline Unit on UT2736-06521 Utah Duchesne Section Plat - 640 Acres **Surface Location Description** 1/4 of NW 1/4 of NW 1/4 of Section 21 Township 5S Range 3W Locate well in two directions from nearest lines of quarter section and drilling unit Location 660 ft. frm (N/S) N Line of guarter section and 660 ft, from (E/W) W Line of quarter section. WELL ACTIVITY TYPE OF PERMIT W Brine Disposal Individual X Area X Enhanced Recovery Hydrocarbon Storage Number of Wells 111 Well Number UTE TRIBAL 21-04 Lease Name Ute Indian Tribe S TUBING -- CASING ANNULUS PRESSURE INJECTION PRESSURE TOTAL VOLUME INJECTED (OPTIONAL MONITORING) MONTH YEAR AVERAGE PSIG MAXIMUM PSIG BBL MCF MINIMUM PSIG MAXIMUM PSIG 0 1643 0 January 13 1705 1487 13 1647 1667 1247 0 0 February 13 1660 0 0 1679 1500 March 13 1686 0 0 April 1699 1573 May 13 1696 1738 1629 0 0 13 1699 1724 1236 0 0 June 13 1688 1714 1320 0 0 July 13 1730 0 0 August 1705 1498 September 13 1702 1732 1476 0 0 13 1702 1717 0 0 October 1574 November 13 1709 1721 1505 0 0 1700 1729 0 December 13 1478 0 Certification I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32) Name and Official Title (Please type or print) Signature **Date Signed** Chad Stevenson, Water Facilities Supervisor 2/11/2014 EPA Form 7520-11 (Rev. 12-08)



U2 Entered

#### **Multi-Chem Analytical Laboratory**

1553 East Highway 40 Vernal, UT 84078

Units of Measurement: Standard



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#### Water Analysis Report

Production Company:

PETROGLYPH ENERGY INC

Well Name:

UTE TRIBAL 21-04 INJ

Sales Rep: James Patry Lab Tech: Gary Winegar

Sample Point:

Wellhead

Sample Date:

Sample ID:

1/8/2014 WA-263033 Scaling potential predicted using ScaleSoftPitzer from

Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	0.999
pH:	7.20
Calculated TDS (mg/L):	2811.95
CO2 in Gas (%):	
Dissolved CO <sub>2</sub> (mg/L)):	0.00
H <sub>2</sub> S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics									
Cations	mg/L	Anions	mg/L						
Sodium (Na):	732.00	Chloride (CI):	1000.00						
Potassium (K):	4.10	Sulfate (SO <sub>4</sub> ):	366.00						
Magnesium (Mg):	63.00	Bicarbonate (HCO3):	488.00						
Calcium (Ca):	130.00	Carbonate (CO <sub>3</sub> ):							
Strontium (Sr):	3.40	Acetic Acid (CH3COO)							
Barium (Ba):	0.48	Propionic Acid (C2H5COO)							
Iron (Fe):	2.90	Butanoic Acid (C3H7COO)							
Zinc (Zn):	0.37	Isobutyric Acid ((CH3)2CHCOO)							
Lead (Pb):	0.11	Fluoride (F):							
Ammonia NH3:		Bromine (Br):							
Manganese (Mn):	0.19	Silica (SiO2):	21.40						

Notes:

B=.6 Al=0 Li=.04

(PTB = Pounds per Thousand Barrels)

			cium oonate	Barium	n Sulfate		ron Ilfide		ron oonate		osum 4·2H2O		estite SO4		alite aCl		Zinc ulfide
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	PTB	SI	PTB	SI	РТВ
60.00	14.00	0.24	11.83	1.47	0.28	0.00	0.00	0.31	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.22	10.81	1.32	0.27	0.00	0.00	0.35	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.28	13.38	1.19	0.27	0.00	0.00	0.45	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	0.33	16.32	1.08	0.26	0.00	0.00	0.55	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	0.40	19.60	0.98	0.26	0.00	0.00	0.66	1.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	0.47	23.19	0.90	0.25	0.00	0.00	0.76	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	0.54	27.05	0.83	0.25	0.00	0.00	0.87	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	0.62	31.16	0.78	0.24	0.00	0.00	0.97	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	0.70	35.46	0.73	0.23	0.00	0.00	1.08	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	0.79	39.93	0.69	0.23	0.00	0.00	1.18	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

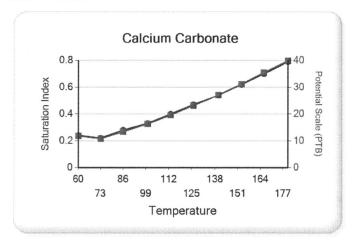
A HALLIBURTON SERVICE

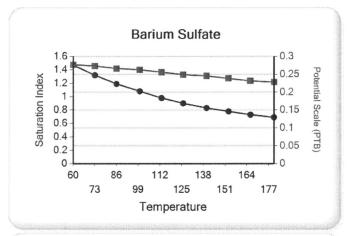
#### Water Analysis Report

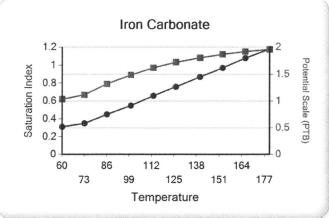
			hydrate 4~0.5H2 O		ydrate SO4		cium oride		inc onate		ead Ilfide		/lg cate		Mg cate		e icate
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.53
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	1.04
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	1.43
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14	1.72
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2.74	1.91
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.09	0.00	0.00	0.40	2.68	0.00	0.00	3.36	2.04
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.14	0.00	0.00	1.22	8.17	0.00	0.00	3.99	2.12

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

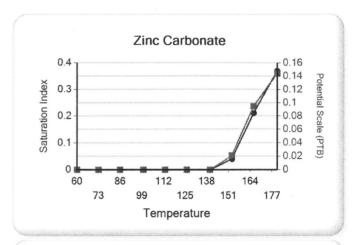


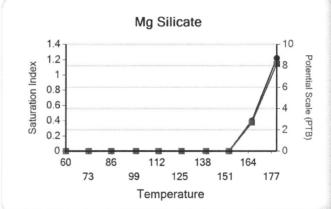


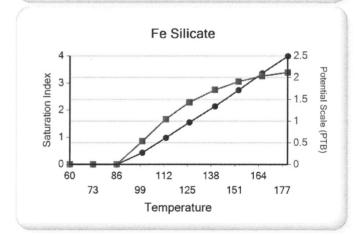


A HALLIBURTON SERVICE

#### Water Analysis Report







Innovation

#### RECEIVED

SEP 30 2013

Office of Enforcement, Compliance and Environmental Justice (UFO)

September 26, 2013

Don Breffle
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street

Denver, CO 80202-1129

Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-06251

**Mechanical Integrity Test** 

Standard Five year retesting for Ute Tribal 21-04

Mr. Breffle:

The enclose Mechanical Integrity Test was performed on the above referenced well on September 17, 2013. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,

Petroglyph Operating Co., Inc.

Rodrigo Jurado

**Regulatory Compliance Specialist** 

Encl: MIT for the Ute Tribal 21-04

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U2 Entered

Date \_\_\_\_\_ (1) (17 63

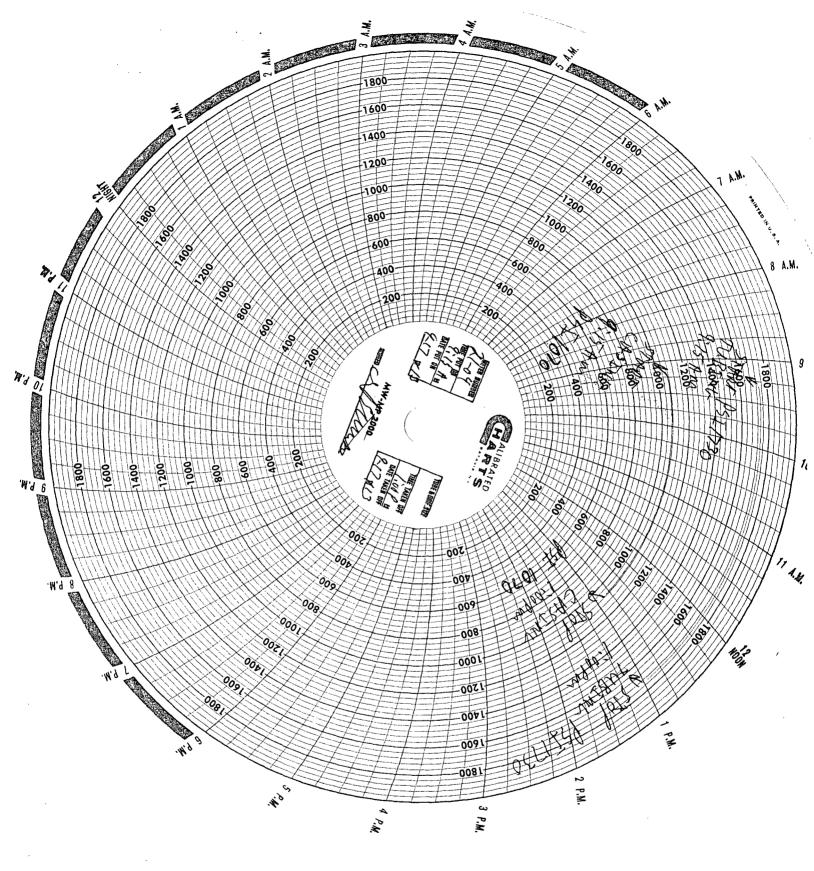
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# **Mechanical Integrity Test** Tubing/Casing Annulus Pressure Test U.S. Environmental Protection Agency Underground Injection Control Program 1595 Wynkoop Street, Denver, CO 80202

EPA Witness:	Date: <u> </u>	
Test conducted by: CHAD STEVE WSON		
Others present:		
Well Name: 21-04	Type: ER SWD Status: AC TA	UC
Field: AWTELOPE CREEK		
Location: <u>21-04</u> Sec: T N/S F	RE / W_County: <u> </u>	II
Operator: PRICLUPK EWERY	•	
	Allowable Pressure: PS	SIG
Regularly scheduled test	? [\4] Yes [ ] No	
Initial test for permit		
Test after well rework		
Well injecting during test? If Yes, rate:	53bpd	
Pre-test annulus pressure:	psig	

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		PRESSURE	RECORD
Initial Pressure	1730 psig	psig	psig
End of test pressure	1730 psig	psig	psig
CASING / TUBING	ANNULUS	PRESSURE	RECORD
0 minutes	<i>1070</i> psig	psig	psig
5 minutes	1070 psig	psig	psig
10 minutes	1070 psig	psig	psig
15 minutes	1070 psig	psig	psig
20 minutes	ルフォ psig	psig	psig
25 minutes	1070 psig	psig	psig
30 minutes	1070 psig	psig	psig
4 Hours minutes	1070 psig	psig	psig
minutes	psig	psig	psig
RESULT	[ ] Pass     [ ]Fail	[ ] Pass [ ]Fail	[ ] Pass [ ]Fail



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United States Environmental Protection Agency

Washington, DC 20460 ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT Name and Address of Existing Permittee Name and Address of Surface Owner Ute Indian Tribe Petroglyph Operating Company, Inc. 2258 P.O. Box 70 P.O. Box 7608 Boise, Idaho 83709 Ft. Duchesne, Utah 84026 State County Permit Number Locate Well and Outline Unit on Utah UT2736-06521 Duchesne Section Plat - 640 Acres Surface Location Description 1/4 of 1/4 of NW 1/4 of NW 1/4 of Section 21 Township 5S Locate well in two directions from nearest lines of quarter section and drilling unit Location 660 ft. frm (N/S) N Line of quarter section and 660 ft. from (E/W) W Line of quarter section. WELL ACTIVITY TYPE OF PERMIT Brine Disposal Individual X Enhanced Recovery X Area Hydrocarbon Storage Number of Wells 111 Well Number UTE TRIBAL 21-04 Lease Name Ute Indian Tribe TUBING -- CASING ANNULUS PRESSURE INJECTION PRESSURE TOTAL VOLUME INJECTED (OPTIONAL MONITORING) MONTH AVERAGE PSIG MAXIMUM PSIG YEAR BBL MCE MINIMUM PSIG MAXIMUM PSIG 1731 1755 1515 January 11 February 11 1715 1731 1085 1689 1744 1000 March 11 April 11 1699 1737 1016 11 1740 1751 1338 May 1743 June 11 1717 1173 July 11 1616 1719 615 August 11 1707 1729 1265 September 11 1723 1728 1407 October 1682 1728 11 915 November 11 1698 1729 994 December 11 1682 1731 1022 Certification I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32) Name and Official Title (Please type or print) Signature **Date Signed** Chad Stevenson, Water Facilities Supervisor 2/1/2012 EPA Form 7520-11 (Rev. 12-08)

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U2 Entered

Date 2/27/12Initial 3/2

#### Multi-Chem Analytical Laboratory

1553 East Highway 40 Vernal, UT 84078



A HALLIBURTON SERVICE

#### Water Analysis Report

Production Company: PETROGLYPH ENERGY INC

Well Name: Sample Point: UTE TRIBAL 21-04 INJ

Sample Point: Well Head
Sample Date: 12/12/2011
Sample ID: WA-205690

Sales Rep: James Patry
Lab Tech: John Keel

Scaling potential predicted using ScaleSoftPitzer from

Brine Chemistry Consortium (Rice University)

Sample Specific	S
Test Date:	12/12/2011
System Temperature 1 (°F):	300.00
System Pressure 1 (psig):	1300.00
System Temperature 2 (°F):	60.00
System Pressure 2 (psig):	14.70
Calculated Density (g/ml):	1.00
pH:	7.60
Calculated TDS (mg/L):	1546.56
CO2 in Gas (%):	0.00
Dissolved CO <sub>2</sub> (mg/L)):	19.80
H <sub>2</sub> S in Gas (%):	
H2S in Water (mg/L):	20.00

Analysis @ Properties in Sample Specifics						
Cations	mg/L	Anions	mg/L			
Sodium (Na):	368.96	Chloride (CI):	500.00			
Potassium (K):	3.70	Sulfate (SO <sub>4</sub> ):	294.00			
Magnesium (Mg):	45.00	Bicarbonate (HCO3):	245.60			
Calcium (Ca):	87.00	Carbonate (CO <sub>3</sub> ):	0.00			
Strontium (Sr):		Acetic Acid (CH3COO)	0.00			
Barium (Ba):	1.00	Propionic Acid (C2H5COO)	0.00			
Iron (Fe):	1.20	Butanoic Acid (C3H7COO)	0.00			
Zinc (Zn):	0.00	Isobutyric Acid ((CH3)2CHCOO)	0.00			
Lead (Pb):	0.00	Fluoride (F):				
Ammonia NH3:		Bromine (Br):				
Manganese (Mn):	0.10	Silica (SiO2):				

Notes:

(PTB = Pounds per Thousand Barrels)

			cium oonate	Barium	n Sulfate		ron Ilfide		ron conate		osum 4·2H2O		estite SO4		alite aCl		Zinc ulfide
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	PTB	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	PTB
60	14	0.22	4.10	1.84	0.59	2.95	0.66	0.04	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	157	0.23	4.36	1.57	0.58	2.69	0.66	0.17	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113	300	0.32	6.41	1.37	0.57	2.59	0.66	0.35	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	443	0.45	9.31	1.23	0.56	2.56	0.66	0.54	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	585	0.60	13.02	1.14	0.55	2.59	0.66	0.74	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193	728	0.77	17.45	1.09	0.55	2.67	0.66	0.93	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	871	0.95	22.42	1.07	0.54	2.79	0.66	1.12	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
246	1014	1.14	27.72	1.08	0.55	2.93	0.66	1.30	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
273	1157	1.33	33.09	1.11	0.55	3.10	0.66	1.46	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300	1300	1.52	38.31	1.16	0.55	3.27	0.66	1.61	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		Hemihydrate CaSO4~0.5H2 O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	РТВ	SI	PTB
60	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	157	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193	728	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	871	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
246	1014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
273	1157	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300	1300	0.00	0.00	0.17	21.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate

Innovation

#### Multi-Chem Analytical Laboratory

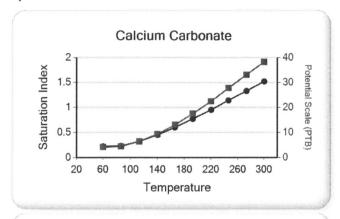
1553 East Highway 40

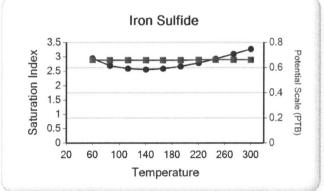
Vernal, UT 84078

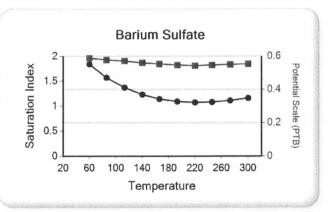
### multi-chem<sup>\*</sup>

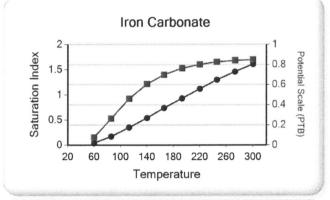
A HALLIBURTON SERVICE

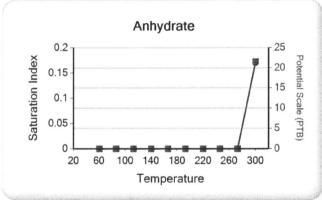
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Anhydrate











Excellence



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18<sup>TH</sup> STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

JAN 25 2005

Ref: 8P-W-GW

#### <u>CERTIFIED MAIL</u> RETURN RECEIPT REQUESTED

Mr. Matt Corser District Engineer Petroglyph Operating Company, Inc. 4116 W 3000 South Ioka Lane P.O. Box 607 Roosevelt, UT 84066

**RE: AUTHORIZATION TO INJECT** 

Ute Tribal No. 21-04

EPA Well ID: <u>UT20736-06521</u>

EPA UIC Area Permit No. UT20736-00000

Dear Mr. Corser:

Thank you for submitting information pertaining to the newly constructed or converted Ute Tribal No. 21-04 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements of <u>Authorization for Additional Well UT20736-06521</u>, for the Ute Tribal No. 21-04 injection well, required well owner and operator Petroglyph Operating Company, Inc. to submit the following information to the Director:

- A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
- Pore pressure calculation of the proposed injection zone, and
- completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal No. 21-04 enhanced recovery injection well under the

conditions of <u>Authorization for Additional Well UT20736-06521</u> and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC U.S. EPA Region 8, Mail Code 8ENF-UFO 999 18th Street, Suite 300 Denver, Colorado 80202-2466

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal No. 21-04 shall not exceed <u>1777</u> psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of <u>Authorization for Additional Well UT20736-06521</u> and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Sandra A. Stavnes

Director

Ground Water Program

cc: Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Chester Mills
BIA - Uintah & Ouray Indian Agency
P.O. Box 130
Fort Duchesne, UT 84026

Elaine Willie Environmental Coordinator Ute Indian Tribe P.O. Box 460 Fort Duchesne, UT 84026

Gil Hunt Technical Services Manager Utah Division of Oil, Gas, and Mining 1594 West North Temple - Suite 1220 Salt Lake City, UT 84114-5801

Ed Forsman Sr. Petroleum Engineer BLM - Vernal District 170 South 500 East Vernal, UT 84078

Nathan Wiser, 8ENF-UFO

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SENDER: COMPLETE THIS SECTION	٧	COMPLETE THIS S	ECTION ON DE	ELIVERY
<ul> <li>Complete items 1, 2, and 3. Also conitem 4 if Restricted Delivery is desired</li> <li>Print your name and address on the so that we can return the card to you</li> <li>Attach this card to the back of the mor on the front if space permits.</li> </ul>	d. reverse ı.	A. Signature  X	· · · · · · · · · · · · · · · · · · ·	Agent Addresser C. Date of Deliver
1. Article Addressed to: UTC Tribal a UT 26736-06478  Mr Matt Corser, District Engineer Petroglyph Operating Company, Inc. 4116 W 3000 S loka Lane	Ground Water	De Sapriyery addres		
Roosevell, UT 84066  NOW W JAN 29	1 2005 1 2005 Program 20	3 Service Type Service Type Registered Registered Mail Restricted Deliver	☐ C.O.D.	Aail ceeipt for Merchandis
Article Number     (Transfer from service label)	7001	0320 0005	9389 51	81
PS Form 3811, February 2004	Domestic Ret	urn Receipt		102595-02-M-154

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000	Restricted Delivery Fee (Endorsement Required)	JAN 2 5 2005
	Total Postage & Fees	\$
7001 0320	Sent To  Street, Apt. No.; or PO Box No.  City, State, ZIP+4	Mr Matt Corser, District Engineer Petroglyph Operating Company, Inc 4116 W 3000 S loka Lane Roosevelt, UT 84066
20,	PS Form 3800, January 2	

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#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18<sup>TH</sup> STREET - SUITE 300
DENVER, CO 80202-2466
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**CONCURRENCE COPY** 

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21-04

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1/21/05

Printed on Recycled Paper

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Sandra A. Stavnes Director Ground Water Program

cc: Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
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